stry, but also by power plants. On the whole, however, brown coal and peat have no great importance for Ukraine. 316

7. Petroleum and Gas

The petroleum industry was founded in Galicia about the middle of the 19th century. In 1909 Galicia (yearly production of 2 million t) contributed 5 % of the world production of petroleum and ranked third. But an uninterrupted decline set in, so that in 1937 its figure of 510 000 t was only 16th in world production. 382

The reason for this decline was the splitting up of landed property and backward methods of production. Some of the 25 refineries were on Polish territory. The crude oil is transported by rail. As the high paraffin content of Galician oil causes obstruction in pipes and as the oilfields are far from the sea and the market for this oil is in Central Europe, there has been no attempt to lay pipe lines.

In the Kuban area the figure for petroleum production was only 150 000 t in 1912, but this increased under the two first Five Year Plans to 1.8 million t in 1937. Since 1900 the petroleum is conducted by pipe from Maikop to Krasnodar, the pipe being 108 km long and able to send 900 000 t a year. In 1928 it was connected with the main pipe which is 618 km long and connects the Groznyj oil-field with Tuapse, a growing harbor on the Black Sea.

Since 1893 oil-wells have been bored in Groznyj. Shortly before World War I, these wells produced 1.2 million t, and in 1925 double as much, under the first Five Year Plan almost 7 million t yearly, under the second 3.7 million t. These varying yields testify to the wealth of oil, but also to the ruthless methods of exploitation, especially where oil is allowed to spurt out in jets. 315 ●

In the Kuban area and in Groznyj oil refineries are equipped on modern lines. In the thirties 3/4 of the entire petrol requirements of Russia were supplied from this area. Pipe lines also connect Groznyj with Mahach Kala on the Caspian Sea, 382 315

Table 11. Production of Petroleum in

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	1880	1885	1890	1895	1900	1901	1902	1903	1904	1905
Galicia	32	65	92	215	326	452	576	728	830	802
Maikop	—	18	30	22	4	5	7	5	—	1
Groznyj	—	—	—	463	500	573	527	537	660	707
Ukraine	32	83	122	700	830	1030	1110	1270	1490	1510
Russian Empire and Austria	590	1950	3720	6870	10700	12000	11600	11000	11600	8300
% of Ukraine	5½	4¼	3¼	10¼	7¾	8½	9½	11½	13	18¼

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Galicia	765	705	715	736	770	813	796	720	745	675
Maikop	18	45	51	44	46	77	72	80	105	155
Groznyj	1207	1440	1504	1640	2014	2410	3022	3360	3690	4570
Ukraine	1990	2190	2270	2420	3830	3300	3890	4160	4540	5400
Soviet Union and Poland	4300	5300	6000	6800	7100	8800	9700	11300	12300	14400
% of Ukraine	46¼	41¼	37¾	35½	54	40¾	40	36¾	37	37½

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with Armavir (490 km) and thence with Trudova in the Donets Basin (468 km). There is a plan to extend the lines to Dnipropetrovske (242 km).

In 1937 the petroleum produced in Ukraine, including Groznyj, amounted to 5 million t = 2 % of world production.

It is only Galicia that possesses any appreciable quantities of natural gas. During the thirties, production rose to about ½ million cubic meters, the greater part of which was used in the manufacture of gasoline. The longest pipes are from Dashava to Boryslav and Lviv.

8. Chemical Industry and the Production of Salt

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The chief products of the chemical industry which grew rapidly during the First World War are acids (e. g. sulphuric acid) and bases, soda and artificial manure. In 1934 in Dnipro-Ukraine there were 103 plants employing 28 650 workers, 14 of these plants (12 730 workers) being big businesses. In Western

316 million tons. The beds in the Donets Basin have the advantage of being shallow and the disadvantage of being unevenly distributed and not very large. They are only three-quarters of a meter in diameter. Besides, the coal is impure and also has a high ash content. In spite of the fact that more is produced, the method of mining is antiquated.

Besides the incidence of brown coal in the Donets region, there are 120 smaller deposits in the right-bank region of the Ukraine, but they /162/ are scarcely exploited. It is presumed that there are larger deposits in this region also. In 1935 the total reserves of brown coal in the Soviet Ukraine were estimated at 550 million tons. (100) The mining of this coal is very much neg-

100. Kubiyovich: Geography of the Ukrainian and Bordering Areas, page 442.

lected and ore-dressing is unknown. In 1935 a total of 300,000 tons of brown coal was extracted in all the Ukrainian provinces, 240,000 tons of which came from eastern Ukraine. (101) The ex-

101. Deminskiy: The Economy of the Ukraine, page 137.

tensive peat bogs are merely of local importance.
315 When it comes to oil, the Ukrainian earth is
135 not niggardly. Well-known as the oil fields of Drogobich and Borislav on the northern slope of the Carpathians, the reserves of which are estimated at 58 to 100 million tons. Extraction reached its height as early as 1902 when it amounted to 2 million tons or 5% of world production. Since then it has constantly decreased, amounting to 1.1 million tons in 1913 and an annual average of 500,000 to 600,000 tons from 1932 to 1936. (102)

102. Kubiyovich: Geography of the Ukrainian and Bordering Areas, page 443.

135 654 To the south-east, in the Don and northern Donets valleys, geologists have discovered a number of new coal-bearing areas, and have confirmed that the Donets Basin coal layers stretch far to the east and south.

Other investigations of coal-bearing areas are to begin shortly, particularly around the Azov Sea coast and in other regions bordering the Donets Basin.

Coke

316 The coke output of the Ukrainian S.S.R. in 1950 is planned to be 15,500,000 tons.

Natural Gas and Oil

315 185 With the incorporation of Western Ukraine in 1939, the Ukrainian S.S.R. came into possession of oil producing regions. The Five-Year Plan calls for the intensive development of these and other areas of the Ukraine for the increased production of oil and natural gas. Three hundred and twenty-five wells are to be located to add to the [654] petroleum resources of the western regions; prospecting for commercial deposits of petroleum in the Rozny area is to be completed; and there is to be extensive geological exploration for natural gas in the Dragobych Region (Western Ukraine) and on the Azov and Black Sea coasts.

[382] The total output of petroleum in the Ukrainian S.S.R. in 1950 is fixed by the Five-Year Plan at 325,000 metric tons.

The plan also provides for the building of a gas pipeline from Dashava to Kiev. Already in process of construction, the first section of the pipeline will be completed this year (1947) and will supply gas to more than 30,000 flats and several large industrial plants in Kiev.

Electric Power Stations

379 Electrification has been one of the outstanding features of the Soviet economy. Before the war the Ukrainian Republic possessed a wide network of electric power stations. Best known was the huge Dnieper Dam and Lenin Hydro-electric Station, completed in 1932 near Zaporozhie. This station supplied electric power to a great industrial region: in the north the steel mills of Dniepropetrovsk and Dnieprodzerzhinsk, and to the south-east, the Nikopol manganese mines. These three industrial centres developed quickly after the Dnieper Dam was built; and the abundance of cheap power available from it also gave rise to the growth of a metal and machine-building centre at Zaporozhie.

in agriculture (fertilizers) and in other branches of the economy. There are several superphosphate plants on the right bank, a large soda industry in the Artemovsk-Lisichansk area in the north of the Donets Basin, based on local salt deposits, chemical plants tied closely to the coking and the metallurgical establishments, and sulphuric acid and fertilizer plants connected with the metallurgy of zinc.

In addition to zinc, which is imported into the Donets Basin, nonferrous metallurgy includes that of aluminum, which is also imported and worked at Zaporozh'ye on the basis of *Dneproges* power, and of mercury, mined near Nikitovka in the Donbas.

The petroleum and natural-gas industry is of only local importance and is intended to supply the Ukraine with its gas and liquid fuel needs. The oil fields lie in the foothills of the Carpathians, near Borislav and Drogobych. During the current Plan, a natural gas pipe line was laid from Dashava (in the oil fields) to Kiev. The Ukraine also imports petroleum from Baku via the ports of Osipenko and Odessa, and the station of Trudovaya (Donbas) is the terminus of a kerosene pipe line from the Groznyy fields.

The textile industry (wool, cotton, and linen milling) supplies only local needs. The food industry, on the other hand, is of national importance. This is true especially of the sugar-refining industry, located mainly in the Vinnitsa and Kiev oblasts, on the right bank, and in the Poltava and Kiev oblasts, on the left bank.

The agriculture of the Ukrainian SSR, less important than heavy industry with respect to the value of production, occupies, nonetheless, a major position in the economy of the USSR. Arable land occupies 60 percent of the total area. Prior to the Second World War the Ukraine was one of the regions best equipped with machine-tractor stations and agricultural machinery. Among the cereals, winter wheat in the west, spring wheat in the east, and barley are most important. The sugar beet is by far the major industrial crop; sunflower, cotton, and tobacco are grown to a lesser extent. Orchard farming is popular and produces melons and pumpkins, garden fruits (apples, pears, plums, and cherries), and in the south, apricots and grapes. Horses, cattle, and pigs are raised throughout the region.

The right-bank Poles'ye is least developed agriculturally. Marshes and forests occupy most of the area. In the isolated patches of moist arable land, potatoes, buckwheat, flax, and hemp are the chief crops. The area abounds, however, in pasture land, and dairy farming is

23: Shabad N-4 (no date) 1951 Rl Soviet Union Rl
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Khotin (Rumanian *Hotin*) lies in an orchard and vineyard area on the Dniester River. There is a noted leather industry.

Stanislav Oblast

Area, 5,400, population, 1,300,000

Stanislav Oblast is drained by the upper Dniester and its right affluents descending from the Carpathian Mountains. It has important petroleum, salt, natural-gas, and potash deposits in the areas of Dolina and Bolekhov, with petroleum fields extending along the foothills in a southeasterly direction to Kosmach, southwest of Kolomyya. The principal oil towns are Bolekhov, Dolina, Peregínsko, Bogorodchany (where ozocerite is also secured), Solotvin, Nadvornaya, Pechenezhin, and Kosmach. Petroleum is refined at Bolekhov, Stanislav, and Kolomyya. The main lumber centers are Delyatin and Kuty, which has a large wood-distillation industry. On the right bank of the Dniester River lies the agricultural zone of the oblast, where grains, tobacco, and sugar beets are raised. Tobacco is processed at Zabolotov and sugar at Gorodenka.

Stanislav (Polish *Stanisławów*, German *Stanislau*) has railroad and machine shops, an oil refinery, and textile and leather industries and produces asphalt, ceramics, lumber, and food products.

Kolomyya (Polish *Kołomyja*, German *Kolomea*), on the upper Prut River, has machine works and oil-refining and chemical plants. Textiles and cement are also produced.

Drogobych Oblast

Area, 4,000, population, 1,200,000

Drogobych Oblast lies on the northern slopes of the Carpathian Mountains and is bordered by Poland in the west. It is the chief petroleum region of the Western Ukraine, with the chief oil fields in the area of Drogobych and Borislav. Near by are potassium and magnesium salt mines and natural-gas wells. Salt is mined at Dobromil'. Agriculture is important along the Dniester River.

Drogobych (Polish *Drohobycz*) is the center of the Western Ukrainian petroleum region, with important refining and chemical installations and potash and magnesium salt mines. It trades in petroleum, livestock, and agricultural products and produces rubber goods, lumber, and food products.

Borislav (Polish *Borysław*) is another petroleum center southwest of Drogobych. It has petroleum and natural-gas wells and engages in the

23: Shabad N-4 (no date) 1951 R1 Soviet Union R1
Ukraine R1

manufacture of drilling equipment and the processing of ozocerite. The health resort of Truskavets, with mineral springs, lies just to the east.[1]

Sambor is an agricultural center, with sawmilling, flour-milling, and distilling industries.

Stryy (Polish *Stryj*) is a rail center where there are machine and metalworking industries, producing mainly drilling equipment, and chemical and lumber (matches and furniture) plants. Petroleum and natural gas are secured near by. From the gas wells of Dashava, just northeast of the city, a pipe line has been laid to Kiev during the post-war Five-Year Plan for industrial and domestic consumption.

The Poles'ye, which is wooded in the north, close to the Pripet River, also contains extensive marshy areas. It is the most backward section of the Western Ukraine. Its subsistence crops are rye and potatoes. Industry is poorly developed and is restricted to flour milling, sawmilling, and brickworking in the rural areas.

Rovno Oblast

Area, 8,000, population, 1,200,000

Rovno Oblast is drained by the Goryn and its affluent, the Sluch'. In the south, on the higher ground of the Volyn'-Podolian upland, agriculture produces grains, hops, tobacco, and sugar beets; in the northern section lumbering is the main industry. Granite, cement rock, and slate are quarried.

Rovno (Polish *Równe*) is a rail center having railroad shops, agricultural machinery works, and chemical and lumber industries.

Volyn' Oblast

Area, 7,700, population, 1,100,000

Volyn' Oblast which borders on Poland along the Western Bug River in the west, has some agriculture (grains and tobacco) in the south, but mainly lumbering industries in the north, along the Pripet River and its affluents.

Lutsk (Polish *Łuck*), the capital, lies on a minor rail branch, at the southern edge of the Pripet Marshes. It is an agricultural center and produces agricultural implements, clothing, leather, lumber, and flour.

Vladimir-Volynskiy (Polish *Włodzimierz*) is a rail junction and grain-trading point near the Polish border.

[1] [of Borislav in Drogobych Oblast--Analyst]